

THE STUDY OF GREEN HUMAN RESOURCE MANAGEMENT (GHRM) AND ITS EFFECT ON SUSTAINABILITY IN GREEN BUILDING USING STRUCTURE EQUATION MODEL

AHMED EISAYOUSUF AL-HOSANI

Fakultib Pengurusan Teknologidan Teknousahawan (FPTT), Universiti Teknikal Malaysia, Melaka

bin.3isa@hotmail.com

Dr. NURULIZWABINTI ABDUL RASHID

Fakulti Pengurusan Teknologidan Teknousahawan (FPTT), Universiti Teknikal Malaysia, Melaka

Nurulizwa@utem.edu.my

ABSTRACT

The GHRM concept has yet to be adapted to the construction sector, despite the fact that many other industries have previously proved its potential benefits. In the labour-intensive construction business, a comprehensive investigation of a unique GHRM paradigm could help to improve staff competences and commitment to sustainable operations. Several local green building issues, contribute to poor sustainability in the UAE, including green staff participation, green training and development, rewards, and health and safety. However, there are other significant green building construction projects in the UAE that are experiencing delays in completion or have been suspended or abandoned. However, the aim of this study intending to identify Green Human Resource Management (GHRM) and its impact on green building sustainability is critical. The questionnaires were distributed to the staff of Al Naboodah Construction Group (ANCG) in UAE. Since the population of this study is 1400 therefore, the sample size was 302. Thus, an aggregate 400 questionnaires were administered across the population. From this number, a total of 315 questionnaires representing 78.75 percent of the total questionnaires administered were retrieved. Out of this number, a total of 18 questionnaires were either partially filled or invalidated as a result of wrongful filling. Thus, therefore resulted in the total number of 297 valid questionnaires which were used for analyses. The analysis was conducted with the Smart PLS. As the main variables of the study are to weigh the impact of Sustainable Human Resource Management dimensions (Green Employee, Green Training & Development, Green Reward & Compensation and Green Health & Safety) and Sustainability Performance dimensions (Economy, Environment and Social) with mediation of Environmental Behaviour. The results show that Sustainable Human Resource Management dimensions have greater effect on Sustainability Performance. This study is important for stakeholders in the green building construction industry in general and for UAE stakeholders in particular, including: project management companies to identify current trends and requirements in the green building construction industry and to select workers according to these factors; to Al Naboodah Construction Group (ANCG) by helping them to develop better plans that can be integrated into the UAE 2030 Plan and Project Manager & Employees-to understand the scope, significance and relevance of the project management approach in the green building construction sector and how it can be implemented for UAE green building construction projects. Future research needs to provide empirical evidence while the Green HRM delivers the positive outcomes. Human resource play very important role in managing employee from entry to exit.

Keywords: Green Human Resource Management, Economy, Environment and Social

1. INTRODUCTION

Construction professionals are under increasing pressure to design and implement sustainable initiatives to enhance the building industry's environmental performance, as society awareness of the environmental implications of construction operations grows (Sim et al., 2015). According to Gieseke et al. (2016), the construction industry should express a goal for net-zero emissions, create and use low carbon building materials, reuse and waste minimization, reverse logistics, and reduce greenhouse gas emissions related to construction operations.

Nonetheless, the building sector still confronts numerous hurdles in achieving a truly sustainable construction paradigm. Employee-centric concerns, government-based difficulties, and cost and time-based issues are the three primary categories of obstacles. Employee-centric issues, however critical to enhancing the construction industry's long-term performance, have received little attention in academic publications, according to the literature (Kucharska&Kowalczyk, 2019). Employee-centric issues are concentrated on empowering construction professionals with the core skills, perceptions, and level of expertise considered necessary to transform to the sustainable buildings paradigm, and its implementation requires genuine human resource-based remedies which are presently rarely discussed, so this gap in research is questionable (Ehnert, 2009). The first section of the chapter delves into the genesis of the construction industry's sustainable paradigm and current sustainable construction methods. It aids in comprehending the growth and limitations of sustainable construction approaches over the last two decades. The next step is to conduct a critical review of the literature in order to identify the issues related to sustainability in green building. Furthermore, the chapter outlines employee-related sustainability gaps as well as possible solutions based on previous research.

Therefore, the construction industry, as a major single-use natural resource, must shift its focus from financial and other traditional metrics of success to delivering beneficial environmental results on projects. On the other hand, the implicit environmental impact of building activities, which really is greater than the direct impact (for example, the impact on water supplies and pollution caused by transportation), cannot be assessed (UNEP, 2017). Hence, stakeholders are concerned about both positive and negative environmental implications of construction projects, and they apply environmental challenges to the projects through various operational disruptions in order to ensure sustainable in green building. By taking into account environmental well-being, human dignity, and economic equality, sustainable construction aims at establishing and preserves harmony between the built and natural ecosystems (Oke et al., 2019).

Sustainable building is supposed to produce long-term social values that highlight product affordability, quality, lifespan, and efficiency while reducing negative environmental impacts. Previous research has established a framework for sustainable construction as a competitive advantage rather than a requirement (Gholami et al., 2016). Green building has been presented as a byproduct of sustainable construction, and it aims to achieve the goals outlined above (Kibert, 2016). Green buildings are promoted and rated in a variety of ways in most nations (BREEAM in the UK, the LEED programme in the USA, Green Star in Australia, CASBEE in Japan and HK-BEAM in Hong Kong). Building Information Modeling (BIM),

Industrialised Building Systems (IBS), Value Management (VM), life cycle costing, design for the environment, and lean construction are just a few of the main sustainable techniques that contribute to sustainable building (Oke et al., 2019). These procedures necessitate a higher level of employee competency, innovation, and knowledge diversity.

Effective Human Resource Management (HRM) has a primary goal of motivating people to achieve organisational goals and increasing productivity (Chapano et al., 2018). Through a focus on construction employees' primary issues such as work-life balance, variety of expertise, sustainable image of the organisation, and resource efficiency, a suitable HR model will help to boost employee engagement and dedication to environmental difficulties.

In numerous industries, including manufacturing, sports, tourism, and hotels, Green Human Resource Management (GHRM) has proven to be beneficial in achieving sustainability. Ozcelik, &Uyargil(2015) investigated the efficacy of the GHRM concept and practises in manufacturing organisations, as well as providing a framework for managers to assess their sustainability performance. The roles of eco-friendly behaviour and staff engagement in achieving long-term goals in the hotel business. Additionally, the usefulness of GHRM strategies has been demonstrated in the financial and health-care industries to increase organisational sustainability performance while minimising environmental degradation (Rawashdeh, 2018). Hence, the growing idea of GHRM has combined environmental management and human resource management to provide environment-based HR solutions in a multitude of sectors with optimal employee engagement and awareness.

Therefore, the objective of this study is to examine green human resource management factors (dimensions) that may likely affect sustainability performance dimensions

2. LITERATURE REVIEW

The Emirates Green Building Council (EGBC) was established in July 2006 and became a member of the World Green Building Council in September 2006 thus making the UAE the 8th country in the world to establish such a council. The aim of the EGBC was to endorse the green building principles and practices to achieve high performance buildings that utilize environmentally friendly technologies, critical for protecting the environment and ensuring sustainability in the UAE.

The Emirates Green Building Council is an active platform for discussion and co-operation among professionals from various segments of the construction industry. The council organized work-shops which have been attended by 600–700 professionals since 2007(Salama, & Hana, 2010). Also, EGBC has developed a green building rating system for the United Arab Emirates. Three existing rating systems were tested: LEED, Green Star and BREEAM. EGBC was minded to apply LEED (Leadership in Energy and Environmental Design) as it has some flexibility. Yet, it was regarded as the basis for the new system that required some modifications. For example, in water usage UAE moved from a 5-point system to a 12-point system, as water issues are very important in the country. The rating system was set to embrace

the local conditions and members of EGBC worked together towards developing a system that can be applied to buildings constructed in the UAE.

United Arab Emirates is driving nation in the Middle East that made enormous strides in advancing the way of life of green working to be adjusted in the nearby development industry which viewed as one of the greatest development areas in the Middle East locale (Yas, &Jaafer, 2020). The principle drivers that coordinate the UAE towards the practical technique in development are the lack in both vitality assets and essential materials together with atmosphere troubles in the Arabian Gulf Region. Amid summer, a temperature of 50C was recorded and mugginess levels came to between 60 to 80 %. This hot muggy condition makes the bay atmosphere one of the harshest situations on the planet. In this way, savvy arrangements ought to be added to the engineering plan of the structures in the UAE to assist the inhabitant with withstanding such high temperatures and mugginess levels and to limit vitality required for cooling. Cooling of structures in the United Arab Emirates represent 60% of power utilization amid summer (Wilhelm An., et. al., 2017). The other critical issue was the expansion of populace of the United Arab Emirates from 3.25 million out of 2003 to 9.15 million out of 2015. This quick development was impression of the financial blast and it was likewise reflected by the expansion of the urban region usage of the fundamental urban areas in the UAE. Subsequently, there were increments in vitality, water and regular assets use. Every one of these components commands the strategy producers and vitality and development specialists to actualize green advancements in the new undertakings particularly in the most recent decade. Three primary associations were set up in UAE, and they are Estidama (maintainability in Arabic), Masdar Institute in Abu Dhabi, and Green Building Regulation Council in Dubai. Estidama pearl rating framework and Dubai Green Building Regulations are adjusted LEED framework to adapt to atmosphere of the UAE. Estidama pearl rating framework added fourth column to the three past columns (natural, monetary, and social) in addition to additional column which is social. To advance green building arrangement in the development segment in Abu Dhabi Urban Planning ensure private tasks simply subsequent to accomplishing no less than 1-pearl confirmation, and with respect to government venture, they ought to accomplish 2-pearl accreditation. In Dubai, the Green Building Regulation which was issued by Dubai Municipality and it was obligatory for government venture in Dubai to pursue this code of green building developments since 2011, and for private undertakings since 2014. Both Abu Dhabi and Dubai rating framework accentuate on diminishing water and vitality consumption, the objective utilization of essential assets, and enhancing the state of living in the structures. (Alobaidi et al, 2015)

2.1 FUNCTIONS AND PRACTICES OF GREEN HUMAN RESOURCE MANAGEMENT (GHRM)

The academic literature points to six GHRM functions as the key to develop pro-environmental behaviour and enhance employee involvement and commitment towards sustainable construction: green recruitment and selection, green training and development, green performance management systems, green compensation and reward system, green employee participants/involvement and green health and safety (Siyambalapitiya et al., 2018). Table 1, shows the traditional definition of HR functions

and its development as part of the GHRM function. However, this thesis takes in consideration only the four major GHRM functions namely, green training and development, green reward and compensation, green employee participants/involvement and green health and safety. As per Figure 2.2, the four GHRM functions can assist in enhancing pro-environmental behaviour by enhancing psychological capital and environmental knowledge. As a prerequisite for the success of sustainable construction, organisations should incorporate environmentally friendly behaviour and commitment in their HRM practices (Mwita, 2019). As such, GHRM functions could attract new environmental competencies, build better employee relations, increase employee participation and involvement, address the training needs and knowledge gaps, thus collectively assisting in overcoming sustainable construction challenges. The four GHRM functions are explained below.

Table 1: Development of green human resource management (GHRM) functions.

SN	Traditional HR		Green HR	
	HRM Function	Definition (Tang et al., 2018)	GHRM Function	Definition
1	Recruitment and selection	The process in organization to hunt and stimulate potential candidates to apply for vacancies, which aims at increasing the number of candidates and, in turn, reducing this number through various tests to select the best candidate meeting the vacancy.	Green recruitment and selection	The process of hiring individuals with green attitudes and environmental knowledge, skills, and behavior (Mishra, 2017).
2	Employee training and development	A series of learning activities, such as skills and knowledge provided by the organization, guide the employees' behaviors towards organisational objectives.	Green employee training and development	Increases environmental awareness, skills, and expertise through training and enhances employee emotional involvement in environmental management (Ahmad, 2015; Mishra, 2017).
3	Performance management system (PMS)	Aiming at general improvement of employees' performance, organization will compare employees' results with goals through which the strategic goals would be achieved in the long-term.	Green performance management system (PMS)	Establishes a green performance indicator, evaluates environmental responsibilities, and success of managing environmental policies through PMS (Siyambalapitiya et al., 2018).
4	Pay and reward systems	A series of rewarding measures aim at attracting, retaining, and motivating the most fitting employees, in turn, to encourage relative knowledge, attitudes, and behaviors of members to complete organisational objectives.	Green pay and reward systems	Introduces monetary benefits through pay scheme and motivates employee involvement of environmental initiatives through rewards (Ahmad, 2015; Siyambalapitiya et al., 2018).
5	Employee involvement	Employees participate in the operational process and commit to the success of firms, contributing their various capacities to organisational improvement.	Green employee involvement	Active participation of employees with organizations' sustainability programs and creates team responsibility for environmental management (Mishra, 2017; Tang et al., 2018).
6	Health and Safety	A series of learning activities, such as skills and knowledge provided by the organization, guide the employees' behaviors towards organisational objectives.	Green Health and Safety	Safety-related performance in the workplace can reduce accidents by increasing the likelihood that work will be performed in compliance with safety regulations

2.1.1 GREEN TRAINING AND DEVELOPMENT

Training is the most effective driver of motivation and to builds intellectual capital in construction companies, which will contribute to the well-being of society (Chapano et al., 2018). The environmental performance of construction companies depends on employees' competencies and commitment towards implementing environmental

practices (e.g., reverse logistics, energy/water efficiency, reuse of material, and disposal of construction waste). Social and ethical sustainable requirements can be addressed through green training, which develops employees' knowledge, skills, and competencies towards the protection of the environment (Chams&García-Blandón, 2019). However, construction projects are highly pressurised work environments, and there is often a lack of incentive for human capital development, which leaves little space for formal training or development (Chapano et al., 2018). The development of sustainable competencies and pro-environmental behaviour is key to overcome challenges to sustainable construction. Green training could provide a systematic approach to enhance environmental competencies, green attitudes, and pro-environmental behaviour (Tang et al., 2018). For instance, green training could provide the knowledge of new waste management techniques and opportunity for reverse logistics, and how to maintain the data on waste.

2.1.2 GREEN REWARD AND COMPENSATION

Having incentive systems in place to reward environmental performance can encourage the workforce to adopt sustainable practices, such as the green pay and reward system that combines a compensation system with environmental performance. For instance, the most sustainable companies in the world, such as Allergan and Adobe Systems Ball Cooperation, practice compensation systems by linking pay and ecological impact factors (Siyambalapitiya et al., 2018). Thus, green pay and reward systems can be potential tools to promote green behaviour. The responsibility of senior managers is to provide leadership and motivate other employees towards incorporating sustainability in their jobs. In this regard, environmental reward systems have a significant impact on employees' willingness to create eco-initiatives. For example, DuPont in the USA practices the Environment Respect Award programme to recognise employee environmental achievements, and 3M uses a suggestion system to reward employees' environmental efforts and profitability (Renwick et al., 2013). Further, linking performance management systems (PMS) with pay and reward helps to motivate the workforce towards environmental performances and retain potential employees. For instance, 8% of UK firms were rewarding green behaviour with various types of financial and non-financial rewards to encourage employee environmental efforts (Ahmad, 2015). The green reward and compensation schemes could encourage both managers and other employees to adopt sustainable construction through incentives, and financial and non-financial recognitions could motivate employees' voluntary pro-environmental behaviour. For example, the higher employee participation in waste management, reuse of materials, recycling waste, reverse logistics, and energy efficiency minimise the project cost and penalties. Finally, the green performance management and reward system evaluates voluntary activities beyond job-related duties and create self-motivated teams.

2.1.3 GREEN EMPLOYEE PARTICIPANTS/INVOLVEMENT

The success of environmental policy implementation may be limited without wider employee acceptance and alignment (Renwick et al., 2013). Environmental initiatives of senior leaders need to be supported by employees, and empowering employees to take ownership of the environmental activities is a key success factor. For instance, survey data for 232 Australian manufacturing companies report a positive association

with employee participation and environmental performance (Simpson and Samson, 2008). Hence, employee participation in green initiatives can enhance efficient resource allocation/usage, minimise waste, and reduce environmental pollution on construction projects (Shi et al., 2013). Employee participation facilitates a sense of environmental ownership on projects and improves the psychological empowerment of employees at all levels, which enhances the success of environmental activities. Accountability of environmental targets, ownership of environmental projects, encouraging employees to research innovative solutions are types of empowerment of employees. This can be achieved by helping employees build competency, clear communication of environmental objectives, providing a fair reward, and recognition of employee environmental initiatives, which can potentially motivate employees to commit to sustainability. Self-motivated employees in an organisation can lead to positive culture change and process improvement (Oke et al., 2019 and Renwick et al., 2013). Hence, individual, managerial, and organisational level involvement in environmental management enhances the competitive advantage of the organisation in employing GHRM (Chams and García-Blandón, 2019).

2.1.4 GREEN HEALTH AND SAFETY

The key responsibility of GHRM is to provide a suitable working environment for employees to manage their work-life (Gardas et al., 2019). The supportive healthy and safe work environment enhances employee motivation and retention by minimising the inherent stress of all project stages in the construction industry. Chapano et al. (2018) mentioned that a high-pressure work environment would leave little space for employee development, and it leads to a lack of innovations. Construction employees' different day-to-day priorities and strict timelines create a stressful work environment (Gardas et al., 2019). Such an environment could limit the opportunities to enhance their knowledge in sustainability and experience towards organisation's sustainable goals. Therefore, the improvement of a supportive work environment is important for environmental management in the construction industry. Businesses as well as individuals' activities are threatening and degrading many of the life-sustaining systems such as the purification of atmosphere, building and equipping the hospitals and many more (Fields & Atiku, 2017). Energy production and distribution, food production, land development and chemicals must be re-imagined if human being is to survive and build individual and communities resilient to new and emerging health threats. The above activities are indispensable for human survival and prosperity. However, the impact they bring to the society and ecological system is unprecedented.

The success of green health and safety practices depends on a satisfied workforce and adequate authority to function green initiatives (Tariq et al., 2016). As such, participative work environments, where employees are enabled to implement green initiatives, will enhance the success of sustainable practices of the organisation (Ahmad, 2015). The green performance management system can be used to dominate the employees' contribution to sustainable construction. Yong et al. (2019b) highlighted that a highly efficient work force with sustainability focus is vital to succeed in the environmental management of the company to uphold green health and safety measures. Thus, the sustainable focus of employees assists in identifying market opportunities and exploiting innovations to achieve the triple bottom line (Epstein,

2018). The sustainable focus assists to create a supportive work environment with higher employee satisfaction compared to force implementation of sustainable construction practices.

The above four green HR functions reinforce the environmental competencies of the employees and develop pro-environment psychological capital, which could bring the pro-environmental behaviour of the employees to overcome sustainable construction challenges. Thus, GHRM functions underpin socio-economic relationships of construction companies with a knowledgeable, committed, and motivated workforce.

Based on above discussion, it was realised that GHRM is the most relevant and novel concept which could help creating a comprehensive solution to sustainability-related employee-centric issues. Thus, it is essential to analyse literature of the individual and organisational factors influencing implementation of the GHRM concept prior to developing construction industry-related GHRM model.

2.2 ENVIRONMENTAL BEHAVIOUR AS MEDIATOR

The success of GHRM is dependent on the employees' environmental behaviour, which includes green behaviour, green attitude, green performance, and green competencies (Dubey et al., 2018). Hence, pro-environmental behaviour is one of the key concepts that assist in aligning organisation environmental performance and employee engagement and commitment.

Islam and Managi (2019, p. 132) defined pro-environmental behaviour as '*individual environmental knowledge and self-awareness of environmental protection.*' Every individual has a different cultural perspective and a set of beliefs that govern the way they work. Therefore, pro-environmental attitudes and behaviour are simultaneously reflected in both personal and work life. For example, an individual's propensity to recycle materials, use renewable energy (solar) at home, and volunteer for environmental activities reflects their positive or negative environmental beliefs. The alignment of organisational environmental values and employee personal values could enhance employee's voluntary participation in environmental activities, which is essential to succeed in sustainable construction.

2.3 SUSTAINABLE PERFORMANCE

Sustainability in business is defined as a dynamic condition resulted from the firm's action in developing perpetual stakeholders' and shareholders' values (Hassan et al., 2016). A fundamental aspect of sustainable value is that the organization which serves the society and the environment could serve its shareholders and customers better as compared to the organization which does not (Abdullah et al., 2014). Dyllick and Muff (2016) stated that sustainability is a set of activities that help improve the earth's maintenance, protecting living beings, prolonging the valuable life of organizations, renewing biosphere, and enhancing the capabilities of society to uphold itself and manage the issues in welfare, participation in humanity and current as well as future personal freedom. Hence, sustainability represents an advanced approach in conducting business and this is an important factor that constructively and innovatively transforms enterprises cultures. Dyllick and Muff (2016) emphasized that this kind of culture would encourage better performance and maximizes the utilization of current assets in a way that brings excellent results in terms of society, environment and the

economy. The evaluation of industrial sustainability performance urges the development of appropriate framework criteria and the definition of germane indicators (Varsei et al., 2014). Numerous currently integrated frameworks that are applied in evaluating global, national or firm level sustainability were revised to recognize the appropriate aspects that should be taken into consideration when assessing the industrial sustainability (Abdul-Rashid et al., 2017).

2.3.1 ECONOMIC PERFORMANCE

Recently, many manufacturing firms have been striving to improve their sustainable economic performance in order to maintain their competitiveness in the business environment (Wang & Sarkis, 2013). The notion of sustainable economic performance relates to the ability of the manufacturing firm to cost reduction related to waste treatment and disposal, purchased materials and financial fines resulting from environmental accidents (Green et al., 2013; Zhu et al., 2017). It is now essential for firms to adopt and determine practices that yield to competitiveness, which in turn yield the sustainable economic performance since the business environment has become more complex and difficult with competition at the SC level and focus on the changing demands of the clients who are now interested in aspects of safety, health, and eco-friendly products (Green et al., 2013).

2.3.2 SOCIAL PERFORMANCE

The social sustainability performance comprises many of attributes that are tremendously tough to distinguish and measure (Goyal et al., 2013). Only a limited number of studies have developed indicators to investigate the social sustainable performance (Abdullah, 2016). For instance, Abdullah et al., (2014) specified six measurement scales for social performance such as local economic impact architectural preservation, employee's satisfaction, access to local green space, functionality, and influence. Kocmanová and Dočekalová (2013) explored social performance via the multi-indicators such as safety and health benefits to workforce, improved ergonomics for workforce and social economy activities that have been developed.

In spite of different scales that have been utilized to identify and measure social performance, the social performance can be summarized as the interpretation of a foundation's objectives in accordance with the acknowledged social esteems, for example, enhancing the financial and social status of customers, guaranteeing social duty to customers, staff, and the society, enhancing the quality and suitability of economic services (Abdullah, 2016).

Nowadays, incorporating social performance has become vital to stimulate business. So, it became mandatory for firms can contribute on the social aspects through the integrated approach with HR members (Zaid et al., 2018b) and SC members (Rothenberg et al., 2017). This integrated approach among HR and SC members can encourage interconnection inside and outside the society and be assured the customer satisfaction (Huo et al., 2015). In fact, corporations can enhance their social reputation through engagement in Corporate Social Responsibility (CSR) programs (Gimenez et al., 2013). In addition, organizations that adopting green practices which contribute to stakeholders' values necessitates managing social concerns with SC

members that composed of customers and suppliers to align with the new corporation's value system (Khan & Qianli, 2017). For instance, the implementation of environmental practices improves the society quality of life, minimize polluting generation, and provide the ergonomic conditions for staff. Thus, lead to a positive effect on the social dimension that concern on society and staff as identified by Ellington (2013).

2.3.3 ENVIRONMENTAL PERFORMANCE

Environmental sustainability performance is a concern of numerous organizations for legally binding consistency, public perception, and competitive advantage. Environmental sustainability relates the ability of manufacturing organizations to diminish pollutant air emanations, gushing waste, and the capacity to diminish utilization of dangerous and toxic materials (Epstein, 2018; Green et al., 2015). In addition, environmental performance reflects the ability of the organization to protect nature and its integrity for future generations (Macke & Genari, 2019). According to Paillé et al., (2014), organizations are enhancing their environmental performance by setting HR practices that support the entire adopting and implementing EMS. Moreover, if firms are setting the correct environmental standards, sharing practices and resources related to changing goods and operations with the assistance of their suppliers and clients, this will inevitably improve their environmental performance (Ahmad, 2015). As supported by Gunasekaran et al., (2015), who stated that organizations are restructuring their relationship for enhanced environmental performance and tuning to clients and suppliers to get data and help them with respect to contamination avoidance.

3. RESEARCH METHODOLOGY

The questionnaires were distributed to the staff of Al Naboodah Construction Group (ANCG) in UAE. Since the population of this study is 1400 therefore, the sample size was 302. Thus, an aggregate 400 questionnaires were administered across the population. From this number, a total of 315 questionnaires representing 78.75 percent of the total questionnaires administered were retrieved. Out of this number, a total of 18 questionnaires were either partially filled or invalidated as a result of wrongful filling. Thus, therefore resulted in the total number of 297 valid questionnaires which were used for analyses. The analysis was conducted with the Smart PLS.

4. ANALYSIS AND RESULT

4.1 STRUCTURAL MODEL EVALUATION

Every one of the defined standards for measurement model validity was met in the past segment, completing the very first phase of the two-staged PLS-SEM assessment procedure. The next part of the equation is discussed in detail. Collinearity testing, significance testing of structural model relationships, assessment of the level of R², assessment of effect size, and assessment of predictive relevance of the model are all part of the structural model review process (Hair et al., 2014). The structural model is shown in Figure 1, with the t-values and p-values of the respective path coefficients and factor loadings.

4.2 PATH COEFFICIENT

The path coefficients are the estimates of the hypothesized relationship between the endogenous latent construct (Sustainable Performance with dimensions Economy, Environment, & Social) and the exogenous latent constructs (Sustainable Human Resource Management with dimensions Green Employee, Green Training & Development, Green Reward & Compensation and Green Health & Safety) and Environmental Behaviour as mediation in the structural model. The strength of the relationship is indicated by the magnitude and significance of the estimates. Path coefficients that are close to +1 are considered to represent strong positive relationships while those that tend towards -1 are considered to represent strong negative relationships (Hair *et al*, 2014). The significance of the path estimates is determined through the bootstrapping procedure in the Smart PLS-SEM software using the critical t-value for significance testing at 5 percent level of significance.

Table 2: Path Coefficient

	Beta	T Statistics (O/STDEV)	P Values	<i>f</i> ²	R ²
Environmental Behaviour -> Sustainable Performance	-0.066	0.598	0.550	0.843	0.779
Green Employee -> Environmental Behaviour	0.334	4.823	0.000	0.017	
Green Employee -> Sustainable Performance	-0.920	7.071	0.000	0.008	
Green Health & Safety -> Environmental Behaviour	0.212	2.863	0.004	0.173	
Green Health & Safety -> Sustainable Performance	-0.147	1.379	0.169	0.561	
Green Reward & Compensation -> Environmental Behaviour	0.034	0.675	0.500	0.825	
Green Reward & Compensation -> Sustainable Performance	-0.263	3.023	0.003	0.169	
Green Training & Development -> Environmental Behaviour	0.371	4.129	0.000	0.066	
Green Training & Development -> Sustainable Performance	0.944	7.175	0.000	0.006	
Sustainable Performance -> Economy	-0.299	5.917	0.000	0.012	
Sustainable Performance -> Environment	-0.246	4.625	0.000	0.048	
Sustainable Performance -> Social	-0.298	5.995	0.000	0.010	

Table 2 shows the path coefficients (β) with their respective t-values, p-values and f^2 values. As shown in the table, nine paths show significant positive relationships while three paths show a negative significant relationship. The highest positive significant path relationship was between Green Training & Development and Sustainable Performance ($\beta=.944$, $t=7.175$, $p<.050$) while the least positive significant path relationship was between Green Health & Safety and Environmental Behaviour ($\beta=.212$, $t=2.863$, $p<.050$). Similarly, Green Training & Development and Environmental Behaviour reported positive and significant relationship with path estimates of ($\beta=.944$, $t=4.129$, $p<.05$). The result suggests that Green Reward & Compensation and Sustainable Performance is positively influenced results shows as ($\beta=.263$, $t=3.023$, $p<.05$). On the other hand, the path relationship between Green Health & Safety and Sustainable Performance shows a negative significant path relationship ($\beta=-.147$, $t=1.379$, $p>.05$). There is also negative relationship between Environmental Behaviour and Sustainable Performance with path model ($\beta=-.066$, $t=0.598$, $p>.05$). However, when considered from the questions on the questionnaire, it is clear that the respondents rated highly on the Sustainable Human Resource Management scales that measured their perceived dimensions (Green Employee, Green Training & Development, Green Reward & Compensation and Green Health & Safety) that implies that they considered these factors slightly down effect towards the dependent variable of the study in terms of defining the Sustainable Performance and its dimensions (Economy, Environment, and Social).

4.3 COEFFICIENT OF DETERMINATION (R^2)

The coefficient of determination (R-square) is the global measure of the structural model's predictive accuracy. It is the indication of the combined effects of all the exogenous latent constructs on the endogenous construct on the model. The R-square also represents the amount of variance in the endogenous latent construct explained by all the exogenous latent constructs in the structural model (Hair, et al 2014). The result shown in 2 indicated that the entire four exogenous constructs in the structural model have significantly high effect on the endogenous latent construct ($R^2=.779$). This shows that the combined effect of the exogenous latent constructs explains about 77 percent of the variance in the endogenous latent construct. This suggests that Sustainable Human Resource Management and its dimensions (Green Employee, Green Training & Development, Green Reward & Compensation and Green Health & Safety), and Environmental Behavior as a mediation collectively predict individual's intentions to take part effectively in describing the Sustainable Performance and its dimensions (Economy, Environment, and Social).

4.4 EFFECT SIZE (F^2)

The R-square as an index for measuring overall model performance can be evaluated further in respect of the contribution of individual exogenous constructs that formed the model. The f^2 measures the change in R^2 occasioned to the omission of a specific exogenous construct in a model. It is used to assess the impact of individual exogenous construct on the R^2 value of the endogenous construct (Hair, et al., 2014). The effect size is measured according to Cohen's (1988) guidelines where f^2 values of .02, .15 and .35 are considered as small, medium and large effects respectively. From 2, the f^2 values of the respective path relationships in the structural model are

presented. The results indicate that Environmental Behaviour have large effect on Sustainable Performance with effect sizes of $f^2=0.843$. All other constructs have similarly large effects on the R-square. For Green Reward & Compensation, Green Health & Safety, Green Health & Safety, and Green Reward & Compensation has large effects the $f^2=0.825, 0.561, 0.173$ and 0.734 respectively shows values effects on the R-square value.

All of the necessary requirements for measurement model validation were met in the preceding part, completing the first stage of the two-staged PLS-SEM assessment process. The second step of the process is discussed in detail. Collinearity validation, statistical significance of structural model connections estimation of degree of R^2 , measurement of effect size, and assessment of predictive validity of the model are all part of the structural model assessment process (Hair et al., 2014).

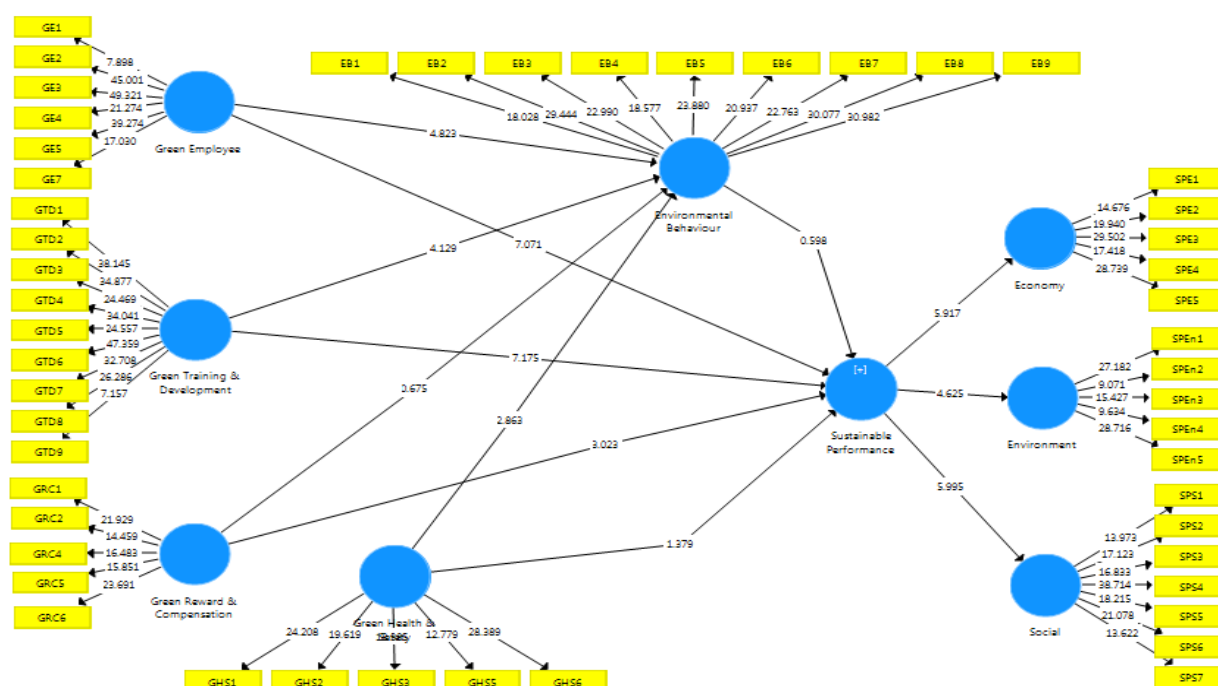


Figure 1: Structural Model

4.4.1 THERE IS A RELATIONSHIP BETWEEN GREEN EMPLOYEE AND SUSTAINABILITY PERFORMANCE

As revealed by the result, Green Employee positively significantly affect Sustainability Performance ($\beta=0.920$, $t=7.071$, $p<.050$). These findings are consistent with the findings from other studies conducted across the countries (Parida, 2020; Zibarras and Coan, 2015). A study by Zhang et al., (2019) showed that the Green Employee and the urban center has a positive relation with the Sustainability Performance. Improving employee engagement in greening your business can lead to a more motivated, productive, and dynamic workforce one that understands the importance and value of good business ethics and corporate responsibility.

4.4.2 THERE IS A RELATIONSHIP BETWEEN GREEN TRAINING & DEVELOPMENT AND SUSTAINABILITY PERFORMANCE

In respect of Green Training & Development the result revealed that it has positively significantly effect on Sustainability Performance ($\beta=.0.994$, $t=7.175$, $p<.050$). However, the finding of this study similar to many studies conducted in developed countries (Shah, 2019; Parida, 2020). Development of attitudes, behaviors, knowledge and skills in the employees that stop the corrosion of environment related attitudes, skills and knowledge comes under the umbrella of training and development (Zoogah, 2011). Training is considered as the preparation of multi-talented employees that is concerned with the development of knowledge and skills required for innovation (Liebowitz, 2010). The capability to acquire new knowledge can be produced among employees through training that can be used for innovation and enhanced performance and competitiveness of the organization as a whole.

4.4.3 THERE IS A RELATIONSHIP BETWEEN GREEN REWARD & COMPENSATION AND SUSTAINABILITY PERFORMANCE

The results also showed that Green Reward & Compensation has a significant positive impact on the Sustainability Performance ($\beta=-.263$, $t=3.023$, $p<.050$). These findings are consistent with other empirical findings that Green Reward & Compensation can stimulate Impact of Port ED by pursuing new technological ways in the ports ((Parida, 2020; Zibarras and Coan, 2015; Zhang et al., 2019). Though compensation and rewards increase green initiatives in organizations, it can never be completely free from some malpractices. Developing effective monetary incentives can be challenging due to the difficulty of accurately and fairly evaluating environmental behaviors and performance (Fernandez, et. al., 2003). According to Gupta (2008) companies need to design energy-efficient products and processes, and devise incentives to accelerate their acceptance.

4.4.4 THERE IS A RELATIONSHIP BETWEEN GREEN HEALTH & SAFETY AND SUSTAINABILITY PERFORMANCE

In respect of Green Health & Safety the result revealed that it has significantly negative effect on Sustainability Performance ($\beta=-.0.147$, $t=1.379$, $p>.05$). However, the finding of this study contradicts many studies conducted in developed countries (Shah, 2019). The importance of identifying sentinel events cannot be overemphasized for emerging technologies and is essential for evaluating control strategies. An occupational sentinel event is defined as a disease, or untimely death, which is occupationally related and whose occurrence may: 1) provide the impetus for epidemiologic or industrial hygiene studies; or 2) may serve as a warning signal indicating that materials substitution, engineering control, personal protection, or medical care may be required.

4.4.5 THERE IS A RELATIONSHIP BETWEEN ENVIRONMENTAL BEHAVIOR AND SUSTAINABILITY PERFORMANCE

The results also showed that Environmental Behavior has negatively impact on the Sustainability Performance ($\beta=-0.006$, $t=0.598$, $p>.05$). These findings are not in line with other empirical findings that Environmental Behavior can stimulate Sustainability Performance by pursuing new technological ways in the organization (Shen, 2015). In

addition, particularly people's strong biospheric values have been found to be important to explain multiple pro-environmental behaviors. Importantly, acting sustainably requires a large variety of actions, from recycling to supporting environmental policy. Research suggests that specific constructs such as behavior-specific self-identity and personal norms (e.g., "I feel morally obliged to recycle") can predict the respective behaviour (recycling; Geiger et al., 2019).

4.4.6 ENVIRONMENTAL BEHAVIOUR MEDIATES THE RELATIONSHIP BETWEEN GREEN EMPLOYEE AND SUSTAINABILITY PERFORMANCE

As revealed by the result, Environmental Behavior has positively significantly mediated the relationship between Green Employee and Sustainability Performance ($\beta=.282$, $t=4.381$, $p<.050$). These findings are consistent with the findings from other studies conducted across the countries (Parida, 2020; Zibarras and Coan, 2015). A study by Zhang et al., (2019) showed that the Green Employee and the urban center has a positive relation with the Sustainability Performance. Improving employee involvement in greening your company can result in a more engaged, productive, and dynamic workforce - one that recognizes the value of good business ethics and corporate responsibility.

4.4.7 ENVIRONMENTAL BEHAVIOR MEDIATES THE RELATIONSHIP BETWEEN GREEN TRAINING & DEVELOPMENT AND SUSTAINABILITY PERFORMANCE

The results also showed that Environmental Behavior has positively significantly mediated the relationship between Green Training & Development and Sustainability Performance ($\beta=-0.275$, $t=4.951$, $p>0.05$). These findings are in line with other empirical findings that Environmental Behavior can stimulate Sustainability Performance by pursuing new technological ways in the organization (Shen, 2015). The organizations are now realizing the fact that the reputation as an employer following green practices is an effective tactic for attracting new talent. Green Training & Development and Green recruitment refers to the procedure of hiring people having behavior, knowledge and skills of environment management systems in the organization.

4.4.8 ENVIRONMENTAL BEHAVIOR MEDIATES THE RELATIONSHIP BETWEEN GREEN REWARD & COMPENSATION AND SUSTAINABILITY PERFORMANCE

In regards to the result, Environmental Behavior has positively significantly mediated the relationship between Green Reward & Compensation and Sustainability Performance ($\beta=0.079$, $t=2.609$, $p<.050$). These findings are consistent with the findings from other studies conducted across the countries (Parida, 2020; Zibarras and Coan, 2015). Further, the research probed if the use of green reward and compensation influence environmental sustainability of the corporations. The findings indicated that majority of the respondents disagreed that the use of green reward and compensation had an influence on environmental sustainability. A study by (Lin & Ho., 2008), supports this by asserting that though compensation and rewards increase green initiatives in organizations, it can never be completely free from some malpractice.

4.4.9 ENVIRONMENTAL BEHAVIOUR MEDIATES THE RELATIONSHIP BETWEEN GREEN HEALTH & SAFETY AND SUSTAINABILITY PERFORMANCE

The results also showed that Environmental Behavior has positively significantly mediated the relationship between Green Health & Safety and Sustainability Performance ($\beta=0.079$, $t=2.627$, $p>0.05$). These findings are in line with other empirical findings that Environmental Behavior can stimulate Sustainability Performance by pursuing new technological ways in the organization (Shen, 2017). Sustainable activities for participation and monitoring should be developed to induce a positive influence on the improvement of work safety and environmental performance. Specifically, these activities can focus on strategies for promoting sustainable activities within SCM including climate change. Based on the results of the study, we assume that a well-developed planning and control system plays a key role in preventing possible risk and improving work safety, which in turn affects organizational performance.

5. CONCLUSION

This study also has practical implications for this study can help managers and organisations decide whether they want to implement GHRM or not, and if they decide to implement it this study can help to decide which specific green practices are most important. Moreover, HR managers that are not familiar with GHRM might get new ideas because of this study, which might result in more GHRM in organizations, which in turn will be beneficial for the environment. In this study it was concluded that green recruitment and selection and green training and development are the most important tools for GHRM to succeed, this has practical relevance because managers might then favour those practices over practices that seemed less important when implementing GHRM, such as green pay and rewards and green performance and appraisal.

As such, this new model can help senior managers and HR professionals to recognise the role of the GHRM concept and the importance of employee involvement in sustainability practices to minimise sustainable construction challenges and external stakeholder pressures.

This study is important for stakeholders in the green building construction industry in general and for UAE stakeholders in particular, including: project management companies to identify current trends and requirements in the green building construction industry and to select workers according to these factors; to Al Naboodah Construction Group (ANCG) by helping them to develop better plans that can be integrated into the UAE 2030 Plan and Project Manager & Employees-to understand the scope, significance and relevance of the project management approach in the green building construction sector and how it can be implemented for UAE green building construction projects.

Future research needs to provide empirical evidence while the Green HRM delivers the positive outcomes. Human resource play very important role in managing employee from entry to exit. Now the corporate are focusing on greening the business, so the Human resource department has the additional responsibility of go green along with HR policies.

REFERENCES

- Ahmad, S. (2015). Green human resource management: Policies and practices. *Cogent business & management*, 2(1), 1030817.
- Alobaidi, K. A., Rahim, A. B. A., Mohammed, A., & Baqutayan, S. (2015). Sustainability achievement and estidama Green building regulations in Abu Dhabi vision 2030. *Mediterranean Journal of Social Sciences*, 6(4), 509.
- Chams, N., & García-Blandón, J. (2019). On the importance of sustainable human resource management for the adoption of sustainable development goals. *Resources, Conservation and Recycling*, 141, 109-122.
- Chams, N., & García-Blandón, J. (2019). On the importance of sustainable human resource management for the adoption of sustainable development goals. *Resources, Conservation and Recycling*, 141, 109-122.
- Chapano, M., Iwu, C. G., & Twum-Darko, M. (2018). The impact of high performance work practices on project performance. A case study of construction companies in South Africa. *Acta Universitatis Danubius: Oeconomica*.
- Chapano, M., Iwu, C. G., & Twum-Darko, M. (2018). The impact of high performance work practices on project performance. A case study of construction companies in South Africa. *Acta Universitatis Danubius: Oeconomica*.
- Ehnert, I. (2009). Sustainability and human resource management: reasoning and applications on corporate websites. *European Journal of International Management*, 3(4), 419-438.
- Epstein, M. J., Elkington, J., & Herman, B. (2018). Making sustainability work: Best practices in managing and measuring corporate social, environmental and economic impacts. Routledge.
- Fields, Z., & Atiku, S. O. (2019). Collective green creativity and eco-innovation as key drivers of sustainable business solutions in organizations. In *Green Business: Concepts, Methodologies, Tools, and Applications* (pp. 415-439). IGI Global.
- Gardas, B. B., Mangla, S. K., Raut, R. D., Narkhede, B., & Luthra, S. (2019). Green talent management to unlock sustainability in the oil and gas sector. *Journal of Cleaner Production*, 229, 850-862.
- Giesekam, J., Barrett, J. R., & Taylor, P. (2016). Construction sector views on low carbon building materials. *Building Research & Information*, 44(4), 423-444.
- Jabbour, C. J. C., & de Sousa Jabbour, A. B. L. (2016). Green human resource management and green supply chain management: Linking two emerging agendas. *Journal of cleaner production*, 112, 1824-1833.
- Kibert, C. J. (2016). *Sustainable construction: green building design and delivery*. John Wiley & Sons.
- Kucharska, W., & Kowalczyk, R. (2019). How to achieve sustainability?—Employee's point of view on company's culture and CSR practice. *Corporate Social Responsibility and Environmental Management*, 26(2), 453-467.
- Mwita, K. (2019). Conceptual review of green human resource management practices. *East African Journal of Social and Applied Sciences*, 1(2), 13-20.
- Oke, A., Aghimien, D., Aigbavboa, C., & Musenga, C. (2019). Drivers of sustainable construction practices in the Zambian construction industry. *Energy Procedia*, 158, 3246-3252.
- Ozcelik, G., & Uyargil, C. (2015). A CONCEPTUAL FRAMEWORK FOR LINE MANAGERS' HRM IMPLEMENTATION EFFECTIVENESS: INTEGRATING SOCIAL CONTEXT AND AMO THEORIES. *Journal of Business Economics and Finance*, 4(2).
- Rawashdeh, A. (2018). The impact of green human resource management on organizational environmental performance in Jordanian health service organizations. *Management Science Letters*, 8(10), 1049-1058.
- Renwick, D. W., Redman, T., & Maguire, S. (2013). Green human resource management: A review and research agenda. *International journal of management reviews*, 15(1), 1-14.
- Renwick, D. W., Redman, T., & Maguire, S. (2013). Green human resource management: A review and research agenda. *International journal of management reviews*, 15(1), 1-14.

- Salama, M., & Hana, A. R. (2010, September). Green buildings and sustainable construction in the United Arab Emirates. In *Proc. 26th Annual ARCOM Conference* (pp. 1397-1405).
- Shen, W., Tang, W., Siripanan, A., Lei, Z., Duffield, C. F., Wilson, D., ... & Wei, Y. (2017). Critical success factors in thailand' s green building industry. *Journal of Asian Architecture and Building Engineering*, 16(2), 317-324.
- Sim, Y. L., &Putuhena, F. J. (2015). Green building technology initiatives to achieve construction quality and environmental sustainability in the construction industry in Malaysia. *Management of Environmental Quality: An International Journal*.
- Simpson, D., & Samson, D. (2010). Environmental strategy and low waste operations: exploring complementarities. *Business Strategy and the Environment*, 19(2), 104-118.
- Siyambalapitiya, J., Zhang, X., & Liu, X. (2018). Green human resource management: A proposed model in the context of Sri Lanka's tourism industry. *Journal of Cleaner Production*, 201, 542-555.
- Tariq, S., Jan, F. A., & Ahmad, M. S. (2016). Green employee empowerment: a systematic literature review on state-of-art in green human resource management. *Quality & Quantity*, 50(1), 237-269.
- Yas, Z., &Jaafer, K. (2020). Factors influencing the spread of green building projects in the UAE. *Journal of Building Engineering*, 27, 100894.
- Yong, J. Y., Yusliza, M. Y., &Fawehinmi, O. O. (2019). Green human resource management: A systematic literature review from 2007 to 2019. *Benchmarking: An International Journal*.
- Yong, J. Y., Yusliza, M. Y., &Fawehinmi, O. O. (2019). Green human resource management: A systematic literature review from 2007 to 2019. *Benchmarking: An International Journal*.